

## REMARKS

Claims 1-4, 8-11, 15, 18, 22, 23, 25, and 26 are pending, with claims 15 and 18 being withdrawn from consideration as drawn to a nonelected invention. By this amendment, Applicant proposes amending claims 1 and 8 to more appropriately define the invention.

In the Final Office Action (“FOA”), the Examiner rejected claims 1-4, 8-11, 22, 23, 25, and 26 under 35 U.S.C. § 103(a) as unpatentable over Applicant’s Admitted Prior Art, Figs. 1, 2, and 3a-d and page 2, line 10, to page 6, line 10 (“AAPA”) taken together with Lin et al., U.S. Patent No. 5,587,342 (“Lin”). In response, Applicant respectfully submits that a *prima facie* case of obviousness has not been established for claims 1-4, 8-11, 22, 23, 25, and 26 because there would have been no motivation to combine AAPA and Lin and there would have been no reasonable expectation of success in combining AAPA and Lin. Particularly, AAPA and Lin teach different methods and apparatus for dispensing material onto a semiconductor chip.

In order to establish a *prima facie* case of obviousness, three basic criteria must be met. First, the prior art reference (or references when combined) must teach or suggest all the claim elements. Furthermore, “[a]ll words in a claim must be considered in judging the patentability of that claim against the prior art.” M.P.E.P. § 2143.03, ed. 8, rev. 1 (Feb. 2003) (quoting *In re Wilson*, 424 F.2d 1382, 1385 (C.C.P.A. 1970)). Second, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify a reference or to combine reference teachings. Third, there must be a reasonable expectation of success. M.P.E.P. § 2143 at 2100-122 to 127.

In rejecting claims 1 and 8, the Examiner alleged that AAPA discloses all the elements of the claims, but admitted that it does not disclose “the extruding section configured to extrude a fluidizing resin into the opening of the mask.” (FOA at 2.) Nonetheless, the Examiner alleged that the extruding section is capable of extruding resin into the openings of the mask by merely

FINNEGAN  
HENDERSON  
FARABOW  
GARRETT &  
DUNNER LLP

1300 I Street, NW  
Washington, DC 20005  
202.408.4000  
Fax 202.408.4400  
[www.finnegan.com](http://www.finnegan.com)

modifying the placement of the extruding section during the extruding step. (FOA at 2.) Further, the Examiner alleged that Lin teaches extrusion of the material directly into the openings of the mask. (FOA at 3.) Thus, the Examiner concludes “it would have been obvious ... to modify the apparatus of [AAPA] by using an extruding section which extrudes material directly into the openings of the mask as disclosed by [Lin] for the purpose of providing an encapsulation step which requires less material to [be] moved across the top of the mask and reduces the energy and time removing excess material during the step of moving the squeegee across the opening in the mask.” (FOA at 3.) Applicant respectfully disagrees.

AAPA discloses a conventional resin encapsulating apparatus comprising an extruding device 6 and a squeegee 16. Extruding device 6 and squeegee 16 appear to be attached to separate drive sections 4 and 18. (Figs. 1 and 2.) The conventional resin encapsulating apparatus includes a tape carrier 10 for mounting a semiconductor chip which is positioned by a fixing block 12 and a mask 13 set over a conveying section 11. (Fig. 2.) In the method of the conventional resin apparatus, tape carrier 10 is moved into position, lifted, and pushed against mask 13. (Specification at 3 and 4.) Then, resin is extruded by extruding device 6 outside an opening 14 and pushed into opening 14 by squeegee 16. (Figs. 3A-3D.)

In contrast, Lin discloses that a mask with openings for extruding resin is formed on a semiconductor wafer using a photolithography method. Particularly, a wet photoresist layer 15 is formed on a semiconductor wafer 10. Lin, col. 2, l. 61 to col. 3, l. 13. Lin discloses that photoresist layer 15 is patterned to form openings 20 using a standard patterning process. Lin, col. 2, l. 61 to col. 3, l. 13. Then Lin discloses that conductive paste 30 may be dispensed into openings 20. Lin, col. 4, ll. 1-9. Photoresist layer 15 is removed later. Lin, col. 3, ll. 57-60.

FINNEGAN  
HENDERSON  
FARABOW  
GARRETT &  
DUNNER LLP

1300 I Street, NW  
Washington, DC 20005  
202.408.4000  
Fax 202.408.4400  
[www.finnegan.com](http://www.finnegan.com)

Thus, AAPA and Lin differ fundamentally in the method and apparatus for masking a chip and dispensing materials onto a semiconductor chip. Specifically, AAPA discloses using a separate mask that can be conveyed to different positions and Lin discloses using a fixed mask formed directly on the semiconductor chip. Accordingly, one skilled in the art would not have been motivated to use the method and apparatus of Lin with the method and apparatus of AAPA. Furthermore, since AAPA and Lin differ fundamentally in the method and apparatus there would be no reasonable expectation of success arising from a combination of AAPA and Lin.

Therefore, since one skilled in the art would not have been motivated to use the method and apparatus of Lin with the method and apparatus of AAPA and there would be no reasonable expectation of success in a combination of AAPA and Lin, a *prima facie* case of obviousness has not been established for claims 1 and 8. For at least this reason, claims 1 and 8 are allowable.

Claims 2-4, 22, and 23 are allowable at least due to their dependence from allowable claim 1. Claims 9-11, 25, and 26 are allowable at least due to their dependence from allowable claim 8. “If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious.” M.P.E.P. § 2143.03 at 2100-126 (citing *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988)).

Applicant respectfully requests that this Amendment under 37 C.F.R. § 1.116 be entered by the Examiner, placing claims 1-4, 8-11, 22, 23, 25, and 26 in condition for allowance. Applicant submits that the proposed amendments of claims 1 and 8 do not raise new issues or necessitate the undertaking of any additional search of the art by the Examiner, since all of the elements and their relationships claimed were either earlier claimed or inherent in the claims as examined. Therefore, this Amendment should allow for immediate action by the Examiner.

FINNEGAN  
HENDERSON  
FARABOW  
GARRETT &  
DUNNER LLP

1300 I Street, NW  
Washington, DC 20005  
202.408.4000  
Fax 202.408.4400  
[www.finnegan.com](http://www.finnegan.com)

Furthermore, Applicant submits that the entry of the amendment would place the application in better form for appeal, should the Examiner dispute the patentability of the pending claims.

In view of the foregoing, Applicant submits that this claimed invention is unobvious in view of the prior art references cited against this application. Applicant therefore requests the entry of this Amendment, the Examiner's reconsideration and reexamination of the application, and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,  
GARRETT & DUNNER, L.L.P.

Dated: January 12, 2004

By: 

Bryan S. Latham  
Reg. No. 49,085

FINNEGAN  
HENDERSON  
FARABOW  
GARRETT &  
DUNNER LLP

1300 I Street, NW  
Washington, DC 20005  
202.408.4000  
Fax 202.408.4400  
www.finnegan.com